

What is claimed is:

1. A one-component, moisture-curing polyurethane hot melt adhesive comprising at least one reaction product with reactive NCO groups produced by reaction of
  - a) at least one di- or polyisocyanate;
  - b) at least two diols selected from the group consisting of polyether-polyols and alkylene diols, wherein at least one diol has an average molecular weight above 1,000 and at least one diol has an average molecular weight below 1,000;
  - c) at least one crystalline or partly crystalline polyester-polyol; and
  - d) at least one low molecular weight polymer obtained by polymerization of one or more olefinically unsaturated monomers.
2. An adhesive according to claim 1, additionally comprising at least one tackifying resin.
3. An adhesive according to claim 1, wherein at least one low molecular weight polymer has active hydrogen groups.
4. An adhesive according to claim 1, wherein at least one tackifying resin having active hydrogen groups is additionally used to produce said at least one reaction product.
5. An adhesive according to claim 1, wherein said reaction product is produced using 5 to 15 weight percent diisocyanate, 20 to 40 weight percent difunctional polypropylene glycol having a molecular weight of from 2,000 to 6,000, 2 to 8 weight of a polypropylene glycol or alkylene diol having a molecular weight of from 200 to 600, 15 to 30 weight % of a crystalline or partially crystalline polyester-

polyol, 10 to 35 weight percent of said low molecular weight polymer, and 2 to 8 weight percent of a tackifying resin.

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6. An adhesive according to claim 1, wherein said reaction product is produced using 8 to 12 weight percent of diphenylmethane diisocyanate, 25 to 40 weight percent of a difunctional polypropylene glycol with a molecular weight of from 2,000 to 6,000, 2 to 8 weight percent of a polypropylene glycol or alkylene diol with a molecular weight of from 200 to 600, 20 to 25 weight percent of a crystalline or partially crystalline polyester-polyol, 15 to 30 weight percent of said low molecular weight polymer, wherein said low molecular weight polymer has hydroxyl groups, 2 to 8 weight percent of a hydroxylated tackifying resin, and 0.01 to 0.1 weight percent of an acid stabilizer.
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7. A method for gluing a one- or multilayer film comprising at least one poly(meth)acrylate to a substrate comprised of a thermoplastic, wood or aluminum, said method comprising using an adhesive according to claim 1 to join said film to said substrate.
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8. A method according to claim 7, wherein said substrate is comprised of a thermoplastic selected from the group consisting of PVC, polypropylene and ABS.
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9. A method according to claim 7, wherein the film comprises a base film comprised of at least one pigmented (meth)acrylate polymer or copolymer and a surface film comprised of at least one colorless methacrylate copolymer, polyvinylidene fluoride or polyvinyl fluoride.
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10. A method according to claim 7, wherein the reaction
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product in said adhesive is produced using 5 to 15 weight percent diisocyanate, 20 to 40 weight percent difunctional polypropylene glycol having a molecular weight of from 2,000 to 6,000, 2 to 8 weight of a polypropylene glycol or alkylene diol having a molecular weight of from 200 to 600, 15 to 30 weight % of a crystalline or partially crystalline polyester-polyol, 10 to 35 weight percent of said low molecular weight polymer, and 2 to 8 weight percent of a tackifying resin.

11. A method according to claim 7, wherein the reaction product in said adhesive is produced using 8 to 12 weight percent of diphenylmethane diisocyanate, 25 to 40 weight percent of a difunctional polypropylene glycol with a molecular weight of from 2,000 to 6,000, 2 to 8 weight percent of a polypropylene glycol or alkylene diol with a molecular weight of from 200 to 600, 20 to 25 weight percent of a crystalline or partially crystalline polyester-polyol, 15 to 30 weight percent of said low molecular weight polymer, wherein said low molecular weight polymer has hydroxyl groups, 2 to 8 weight percent of a hydroxylated tackifying resin, and 0.01 to 0.1 weight percent of an acid stabilizer.

12. A method for laminating a one- or multilayer film comprising at least one poly(meth)acrylate onto a shaped article comprised of polyvinyl chloride (PVC), polypropylene, acrylonitrile/butadiene/styrene copolymer, wood or aluminum, said method comprising:

- a) applying an adhesive according to claim 1 to the film; and
- b) joining the film to a surface of the shaped article.

13. A method according to claim 12, wherein the film is surface treated prior to applying the adhesive by at least one procedure selected from the group consisting of corona treatment, application of a primer, and pre-treatment with a cleaner.
14. A method according to claim 12, wherein said film is pressed onto the surface of the shaped article during step b.
15. A method according to claim 12, wherein said film is preheated prior to step a.
16. A method according to claim 12, wherein said surface of the shaped article is pretreated before step b by at least one procedure selected from the group consisting of application of a primer and treatment with a cleaner.
17. A method according to claim 12, wherein the reaction product in said adhesive is produced using 5 to 15 weight percent diisocyanate, 20 to 40 weight percent difunctional polypropylene glycol having a molecular weight of from 2,000 to 6,000, 2 to 8 weight of a polypropylene glycol or alkylene diol having a molecular weight of from 200 to 600, 15 to 30 weight % of a crystalline or partially crystalline polyester-polyol, 10 to 35 weight percent of said low molecular weight polymer, and 2 to 8 weight percent of a tackifying resin.
18. A method according to claim 12, wherein the reaction product in said adhesive is produced using 8 to 12 weight percent of diphenylmethane diisocyanate, 25 to 40 weight percent of a difunctional polypropylene glycol with a molecular weight of from 2,000 to 6,000, 2 to 8 weight percent of a polypropylene glycol or alkylene diol with a molecular weight of from 200 to

5 600, 20 to 25 weight percent of a crystalline or partially crystalline polyester-polyol, 15 to 30 weight percent of said low molecular weight polymer, wherein said low molecular weight polymer has hydroxyl groups, 2 to 8 weight percent of a hydroxylated tackifying resin, and 0.01 to 0.1 weight percent of an acid stabilizer.